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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/525,096 | 11/13/2005 | Kazumasa Fukushima | JP-A0330-AM | 5637 |

31764 7590 08/06/2008

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| EXAMINER | |
|---|---|
| JAVANMARD, SAHAR | |
| **ART UNIT** | **PAPER NUMBER** |
| 1617 | |
| **MAIL DATE** | **DELIVERY MODE** |
| 08/06/2008 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/525,096 | FUKUSHIMA ET AL. | |
| | Examiner | Art Unit | |
| | SAHAR JAVANMARD | 1617 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *22 February 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *25-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *25-45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/22/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

The Office Action is in response to the 371 of PCT/JP03/10047 filed February 22, 2005. Amended claims 25-45 are being examined on the merits herein.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 25-45 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claims are drawn to a method of treating muscle fatigue and damage and a "disease" associated therewith. The scope of the term "disease" as it falls within this context is very broad and is not considered to be described in the specification, even to one of skill in the art that Applicant had possession of the claimed invention.

Claims 25-45 are rejected under 35 U.S.C. 112, first paragraph, for scope of enablement because the specification, while being enabling for the treatment of muscle fatigue upon administration of N-(3,4-dimethoxycinnamoyl) anthranilic acid, does not

reasonably provide enablement for the prevention/inhibition of muscle fatigue as recited in these claims.

The instant claims are drawn to a method for the prevention/inhibition of muscle fatigue. The instant specification fails to provide information that would allow the skilled artisan to practice the instant invention. Attention is directed to *In re Wands*, 8 USPQ2d 1400 (CAFC 1988) at 1404 where the court set forth the eight factors to consider when assessing if a disclosure would have required undue experimentation. Citing *Ex parte Forman*, 230 USPQ 546 (BdApls 1986) at 547 the court recited eight factors:
(1) the nature of the invention; (2) the state of the prior art; (3) the relative skill of those in the art; (4) the predictability or unpredictability of the art; (5) the breadth of the claims; (6) the amount of direction or guidance presented; (7) the presence or absence of working examples; and (8) the quantity of experimentation necessary.

Nature of the invention:

The instant invention pertains to a method for the prevention/inhibition of muscle fatigue upon administration of N-(3,4-dimethoxycinnamoyl) anthranilic acid.

The state of the prior art:

The skilled artisan would view that the prevention/inhibition of one or more symptoms of muscle fatigue totally, absolutely, or permanently, is highly unlikely, since one cannot guarantee that the muscle fatigue will always be prevented/inhibited.

The relative skill of those in the art:

The relative skill of those in the art is very high.

The predictability or lack thereof in the art:

The skilled artisan would view that the treatment to prevention/inhibition, absolutely, or permanently is highly unpredictable.

The amount of direction or guidance presented and the presence or absence of working examples:

In the instant case, no working examples are presented in the specification as filed showing how to prevent/inhibit muscle fatigue totally, absolutely, or permanently. Note that lack of a working example, is a critical factor to be considered, especially in a case involving an unpredictable and undeveloped art. See MPEP 2164.

*Genentech, Inc. v. Novo Nordisk*, 108 F.3d at 1366, states that "a patent is not a hunting license. It is not a reward for search, but compensation for its successful conclusion" and "[p]atent protection is granted in return for an enabling disclosure of an invention, not for vague intimations of general ideas that may or may not be workable".

Therefore, in view of the *Wands* factors, e.g., the amount of direction or guidance provided, absence of working examples, and the predictability of the art discussed above, to practice the claimed invention herein, a person of skill in the art would have to

engage in undue experimentation to test the combination in the instant claims whether prevention/inhibition of muscle fatigue totally, absolutely, or permanently.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 25-45 are rejected under 3 5 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The instant claims refer to "solvate thereof" however it is not clear from the specification which solvates are exactly encompassed by this claim.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 25-30, 36-39 and 40-45, are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Der Meulen et al. (Journal of Applied Physiology, 1991) and Sampaolesi (European Journal of Physiology, 2001).

Van Der Meulen teaches that plasma levels of specific muscle enzymes such as creatine kinase (CK) are used as markers for muscle tissue damage. With skeletal muscle disorders, plasma CK is used to indicate the status of the disease. The release of muscle enzymes in athletes is used to estimate the amount of muscle damage after severe exercise (page 999, column 1, paragraphs 1 and 2).

Sampaolesi teaches sarcoglycans (SGs) are components of the dystrophin-glycoprotein complex which are genetic defects that cause skeletal muscle dystrophy and cardiomyopathy in humans and animals. Muscle cells that are SG deficient were subjected to cyclic elongation of up to 20% for 1 h resulted in a marked increase in creatine phosphokinase (CK) release into the medium. Tranilast (aka N-(3,4-dimethoxycinnamoyl)anthranilic acid), among other drugs tested, reduced the stretch-induced CK release. Sampaolesi teaches that SG deficiency may play a critical role in the pathology of dystrophin-deficient muscle.

Sampaolesi teaches administering tranilast 1 hour before stretching the muscle (page 168, column 2, first paragraph).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have employed tranilast to treat muscular fatigue or damage. As taught by Van Der Meulen, CK levels provide an indication of the degree of muscle damage. Thus because tranilast is capable of decreasing the CK levels, as taught by Sampaolesi, it would have been obvious to have employed tranilast as a method of treating muscle fatigue or damage or muscle dystrophy disorder.

Additionally, it would have been obvious to treat the muscle fatigue or damage irrespective of the cause, including muscle fatigue/damage cause by exercise, surgical injury, or disease (i.e., myofibrosis).

Furthermore, it is considered prima facie obvious to determine the optimal time and dose of the administration of a drug.

Claims 31-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Der Meulen et al. (Journal of Applied Physiology, 1991) and Sampaolesi (European Journal of Physiology, 2001) as applied to claims 25-30 and 40-45 above in further view of Yamashita (US Patent No. 6,328,979).

Van Der Meulen and Sampaolesi are discussed above.

Neither Van Der Meulen nor Sampaolesi teach the oral administration of tranilast.

Yamashita teaches the oral formulation of tranilast (column 4, lines 16-43).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have employed tranilast as discussed above by Van Der Meulen and Sampaolesi and formulated it into an oral administration which encompasses administration of the drug via food.

## ***Conclusion***

Claims 25-45 are not allowed.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SAHAR JAVANMARD whose telephone number is (571) 270-3280. The examiner can normally be reached on 8 AM-5 PM MON-FRI (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sreeni Padmanabhan can be reached on (571) 272-0629. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

/S. J./

Examiner, Art Unit 1617

/Johann R. Richter/

Supervisory Patent Examiner, Art Unit 1616